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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/597,975	06/20/2000	Yochai Konig	UTO-101	9014

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LUMEN INTELLECTUAL PROPERTY SERVICES, INC.
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EXAMINER

BAROT, BHARAT

ART UNIT	PAPER NUMBER
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2155

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/597,975

Applicant(s)

KONIG ET AL.

Examiner

Bharat N. Barot

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 20, 22-24, 27-49, 51, 53-55 and 58-62 is/are rejected.
- 7) ☒ Claim(s) 19, 21, 25, 26, 50, 52, 56 and 57 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/28/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

RESPONSE TO AMENDMENT

1. This office action is responsive to the amendments and arguments filed on December 28, 2004. Claims 1-62 represent a system and program for Automatic, Personalized Online Information and Product Services. Claims 1-62 remain for further examination.

The new grounds of rejection

2. Applicants' amendments and arguments with respect to claims 1-62 filed on December 28, 2004 have been fully considered but they are deemed to be moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-15, 20, 22-24, 27-46, 51, 53-55, and 58-62 are rejected under 35 U.S.C. 102(e) as being anticipated by Gerace (U.S Patent No. 5,991,735).

Gerace's patent meets all the limitations for claims 1-15, 20, 22-24, 27-46, 51, 53-55, and 58-62 recited in the claimed invention.

Gerace teaches the invention as claimed including a method, system and program for targeting audience based on psychographic or demographic profile using regression analysis and continually updating profile of users (see abstract; col. 2).

Art Unit: 2155

As to claim 1, Gerace teaches a computer-implemented method for providing automatic personalized information services to a user u, the method comprising:

a) transparently monitoring user interactions with data while the user is engaged in normal use of a computer (see figs. 1-2; col. 4, lines 39-56, Gerace discloses that program 31 records user's interaction with the web site);

b) updating user-specific data files, wherein the user-specific data files comprise the monitored user interactions with the data and a set of documents associated with the user (see fig. 3a; col. 6, lines 22-67; col. 7, lines 1-55, Gerace discloses that program 79 continuously updates profiling member 73 which includes user object/file 37 that records many aspects of user psychographic, demographic, preference, and viewed or traversed agate/documents information on the web);

c) estimating parameters of a learning machine (program controller 79 in concert with agate data assembly 71, user profiling member 73 and AD module 75 all possibly running on web server 27 fig. 2), wherein the parameters define a User Model specific to the user and wherein the parameters are estimated in part from the user-specific data files (see figs. 1-3; col. 5, lines 10-15, Gerace discloses that program controller 79 responds to commands from an end user browsing a document after login and gets the necessary information or parameters from agate data assembly 71, user profiling member 73 and AD module 75 to provide appropriate agate info/documents and screen views);

d) analyzing a document d to identify properties of the document (see figs. 5a-d; col. 12, lines 30-65, Gerace discloses that regression analysis is continuously performed on agate data/documents/ad files viewed);

e) estimating a probability $P(u|d)$ that the an unseen document d is of interest to the user u, wherein the probability $P(u|d)$ is estimated by applying the identified properties of the document to the learning machine (program controller 79) having the parameters defined by the User Model (profiling member 71/user objects 37); and

f) using the estimated probability to provide automatic, personalized information services to the user (see figs. 1-3; col. 5, lines 10-15; col. 6, lines 14-40; col. 15, lines 5-67; col. 16, lines 1-20, Gerace discloses that agate data/documents are ranked using a statistical probabilistic factor (please refer to col. 15) and that program controller 79 responds to commands from an end user browsing a document after login and gets the necessary information or parameters from agate data assembly 71, user profiling member 73 and AD module 75 to provide appropriate agate info/documents and screen views).

As to claim 2, Gerace teaches the method of claim 1 wherein the user-specific data files include documents of interest to the user u and documents that are not of interest to the user u, and wherein estimating the parameters comprises distinct treatment of the documents of interest and the documents that are not of interest (see figs. 1-5; col. 5, lines 10-67; col. 7, lines 15-60; col. 15, lines 5-67, Gerace discloses that regression analysis is continuously performed to identify agate information/documents that are of interest or not of interest (ranking factor col. 15)).

As to claim 3, Gerace teaches the method of claim 1 wherein analyzing the document provides for the analysis of documents having multiple distinct media types (see col. 1, lines 10-67; col. 2, lines 10-67, Gerace discloses that agate information could represent documents presented all formats offered by the web/Internet).

As to claim 4, Gerace teaches the method of claim 1 wherein transparently monitoring user interactions with data comprises monitoring multiple distinct modes of user interaction with network data (see col. 7, lines 64-67; col. 8, lines 1-67; col. 11, lines 45-65, Gerace discloses that the user's interaction is record based on the mode of interactivity).

As to claim 5, Gerace teaches the method of claim 4 wherein the multiple distinct modes of user interaction comprise a mode selected from the group consisting of a network searching mode, a network navigation mode, a network browsing mode, an email reading mode, an email writing mode, a document writing mode, a viewing "pushed" information mode, a finding expert advice mode, and a product purchasing mode (see col. 1, lines 15-67; col. 2, lines 24-50; col. 7, lines 5-10; lines 30-50; col. 9-11, Gerace discloses that user interactions are recorded for many modes of web interactions).

As to claim 6, Gerace teaches the method of claim 1 further comprising crawling network documents, wherein the crawling comprises parsing crawled documents for links, calculating probable user interest in the parsed links using the learning machine, and preferentially following links likely to be of interest to the user (see col. 2, lines 40-50; col. 4, lines 25-50; col. 11, lines 45-65; col. 15, lines 15-67; col. 17, lines 35-40, Gerace discloses that links of a document presented for a user are traversed and interactions recorded).

As to claim 7, Gerace teaches the method of claim 1 wherein the identified properties of the document comprise a user u-independent property selected from the group consisting of: a) a probability $P(t,d)$ that the document d is of interest to users interested in a topic t ; b) a topic classifier discrete probability distribution $P(t/d)$; c) a product model discrete probability distribution (p/d); d) product feature values extracted from the document d ; e) an author of the document d ; f) an age of the document d ; g) a list of documents linked to the document d ; h) a language of the document d ; i) a number of users who have accessed the document d ; j) a number of users who have saved the document d in a favorite document list; and k) a list of users previously interested in the document d (see col. 4, lines 40-55; col. 10, lines 55-60; col. 12, lines 45-65; col. 13, lines 1-30; col. 17, lines 25-45; col. 18, lines 35-55; col. 23, lines 1-40, Gerace discloses that the probability and weighting factor takes into consideration many aspects of document parameters).

As to claim 8, Gerace teaches the method of claim 1 wherein the parameters of the learning machine define a user u -dependent function selected from the group consisting of: a) a user topic probability distribution $P(t,u)$ representing interests of the user u in various topics t ; b) a user product probability distribution $P(t/u)$ representing interests of the user u in various products t ; c) a user product feature probability distribution function representing interests of the user u in various features/of each of the various products p ; d) a web site probability distribution $P(s/u)$ representing interests of the user u in various web sites s ; e) a cluster probability distribution $P(c(u)3u)$ representing similarity of the user u to users in various clusters $c(u)$; f) a phrase model probability distribution $p(w/u)$ representing interests of the user u in various phrases w ; g) an information theory based measure $I(lw; lu)$ representing mutual information between various phrases w and the user u ; h) an information theory based measure $I(lw; lu)$ representing mutual information between various topics and the user u ; i) an information theory based measure $I(ls/lu)$ representing mutual information between various web sites s and the user u ; j) an information theory based measure $I(ls/lu)$ representing mutual information between various products and the user u ; and k) an information theory based measure $I(lf;lu)$ representing mutual information between various features of each of the various products p and the user u (see col. 4, lines 40-55; col. 10, lines 55-60; col. 12, lines 45-65; col. 13, lines 1-30; col. 15-16; col. 17, lines 25-45; col. 18, lines 35-55; col. 23, lines 1-40, Gerace discloses that the probability and weighting factor takes into consideration many aspects of document statistical/probability and weight ranking factors).

As to claim 9, Gerace teaches the method of claim 1 wherein the parameters of the learning machine define: a) a user product probability distribution $P(p;u)$ representing interests of the user u in various products p ; and b) a user product feature probability distribution $P(u;p)$ representing interests of the user u in various features/of each of the various products p ; and wherein the method further comprises estimating a probability $P(u/d, \text{product described}=p)$ that a document d that describes a product is of interest to the user u , wherein the probability is estimated in part from the user product

Art Unit: 2155

probability distribution and the user product feature probability distribution (see col. 15; col. 18);

As to claim 10, Gerace teaches the method of claim 9 further comprising recommending products to the user based on the probability $P(u/d)$, product described =p (see col. 7, lines 30-40; col. 8, lines 20-25; col. 9, lines 30-67; col. 12, lines 30-60; col. 15, lines 15-67, Gerace discloses that weighting factors used to determine a ranking factor for statistical probability measure uses product description).

As to claim 11, Gerace teaches the method of claim 1 further comprising estimating a posterior probability $P(u/d,q)$ that the document d is of interest to the user u, given a query q submitted by the user (see col. 5, lines 10-15; col. 22, lines 20-30; col. 23, lines 1-20, Gerace discloses that the program controller 79 tracks user actions taken (selection/clickthroughs) and ranks documents based on a search result list displayed to the user).

As to claim 12, Gerace teaches the method of claim 1 wherein estimating the posterior probability comprises estimating a probability $P(q/d,q)$ that the query q is expressed by the user u with an information need in the document d (see col. 5, lines 10-15; col. 22, lines 20-30; col. 23, lines 1-20, Gerace discloses that the program controller 79 tracks user actions taken (selection/clickthroughs) and ranks documents based on a search result list displayed to the user).

As to claim 13, Gerace teaches the method of claim 1 further comprising applying the identified properties of the document d to a learning machine having product parameters characterizing a product p to estimate a probability $P(p/d)$ that the document d refers to the product p (see col. 17-20).

As to claim 14, Gerace teaches the method of claim 13 further comprising updating the product parameters based on the identified properties of the document d and the estimated probability $P(p/d)$ (see col. 15, lines 20-65; col. 16-20, Gerace discloses that ranking of a document is continuously updated through regression analysis).

As to claim 15, Gerace teaches the method of claim 13 further comprising initializing the product parameters based on a set of documents associated with the product P (see col. 12, lines 30-65; col. 15, Gerace discloses that add series package is associated and ranked based on associated documents viewed by the user).

As to claim 20, Gerace teaches the method of claim 1 further comprising parsing the document d for hyperlinks, and separately estimating for each of the hyperlinks a probability that the hyperlink is of interest to the user u (see col. 6, lines 1-67; col. 7, lines 5-15).

As to claim 22, Gerace teaches the method of claim 1 wherein the monitored user interactions include a sequence of interaction times (see col. 7, lines 15-25).

As to claim 23, Gerace teaches the method of claim 1 further comprising initializing the User Model using information selected from the group consisting of a set of documents provided by the user, a web browser history file associated with the user, a web browser bookmarks file associated with the user, ratings by the user of a set of documents, and previous product purchases made by the user (see col. 7, lines 15-40; col. 9-10).

As to claim 24, Gerace teaches the method of claim 1 further comprising modifying the User Model based on User Model modification requests provided by the user (see col. 2, line 60, Gerace discloses self tailoring of user profile).

As to claims 27-28, Gerace teaches the method of claim 1 further comprising temporarily using a User Model that is built from a set of predetermined parameters of a profile selected by the user and further comprising initializing the User Model by selecting a set of predetermined parameters of a prototype user selected by the user (see col. 2, lines 45-65; col. 6, lines 1-65, Gerace discloses that the user profile is self tailored by the user or a default user profile is targeted to users based on common demographics).

As to claim 29, Gerace teaches the method of claim 28 further comprising updating the predetermined parameters of the prototype user based on actions of users similar to the prototype user (see col. 2, lines 50-65; col. 6, lines 1-40, Geraace discloses that a defaulter user profile is used and then updated to reflect the profile of the new user).

As to claim 30, Gerace teach the method of claim 1 further comprising identifying a set of users interested in the document d (see col. 2, line 60).

As to claim 31, Gerace teaches the method of claim 30 further comprising calculating a range of interests in the document d for the identified set of users (see col. 2, line 60; col. 15, lines 20-65).

Claims 32-46, 51, 53-55, and 58-62 do not teach or define any new limitations above claims 1-15, 20, 22-24, and 27-31 and therefore are rejected for similar reasons.

Claim Rejections - 35 USC § 103(a)

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 16-18, 47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerace (U.S Patent No. 5,991,735).

Gerace teaches the invention substantially as claimed including a method, system and program for targeting audiences based on psychographic or demographic profile using regression analysis and continually updating profile of users (see abstract; col. 2).

As to claims 16, and 18, Gerace teaches the method of claim 1 further comprising clustering multiple users into clusters of similar users (see col. 2, line 60; col. 6, lines 1-40, Gerace discloses that users are grouped based on demographics)

Gerace fails to teach the limitation wherein the clustering comprises calculating distances between User Models, and selecting similar users based on the calculated distances between User Models. Gerace teaches that a user object represents the user

Art Unit: 2155

model and that profiling member updates the user object to reflect the current user model (see col. 2; col. 6; col. 12, lines 30-65).

“Official Notice” is taken that the concept and advantages of calculating distances between User Models, and selecting similar users based on the calculated distances between User Models to group users with similar profiles is old and well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Gerace by specifying calculating distances between User Models, and selecting similar users based on the calculated distances between User Models to determine similar groups of users. One would be motivated to do so since probability and statistical model frequently use distance measurements to arrive at common similarities between groups of users.

As to claim 17, Gerace teaches the method of claim 1.

Gerace fails to teach the claimed limitation of calculating relative entropy values between User Models of multiple users, and clustering together users based on the calculated relative entropy values. Gerace does teach that users are clustered based on similar psychographic and demographic profiles (see col. 2; col. 6; col. 12).

“Official Notice” is taken that the concept and advantages of calculating relative entropy values between User Models of multiple users, and clustering together users based on the calculated relative entropy values is old and well known in the art.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Gerace by specifying calculating relative entropy values between User Models of multiple users, and clustering together users based on the calculated relative entropy values to determine similar groups of users. One would be motivated to do so since probability and statistical model frequently use relative entropy value measurements between User Models of multiple users to arrive at common similarities between groups of users.

Claims 47-49 do not teach or define any new limitations above claims 16-18 and therefore are rejected for similar reasons.

Claim Objections (Allowable Subject Matter)

6. Claims 19, 21, 25-26, 50, 52, and 56-57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach neither singly nor in combination the claimed features of selecting in a group of users an expert user in an area of expertise, wherein selecting the expert user comprises finding an expert User Model among User Models of the group of users, such that the expert User Model indicates a strong interest of the expert user in a document associated with the area of expertise or sending to a third party web server user interest information derived from the User Model, whereby the third party web server may customize its interaction with the user or providing to the user a score for a document identified by the user, wherein the score is derived from the estimated probability or providing to the user a 3D map of a hyper linked document collection, wherein the 3D map indicates a user interest in each document as in claims 19, 21, 25-26, 50, 52, and 56-57.

Response to Arguments

7. Applicant's arguments with respect to claims 1-8 and 10-20 filed on April 14, 2005 have been fully considered but they are not deemed to be persuasive and deemed to be moot in view of the new grounds of rejection.

8. Applicant's arguments have been fully considered. The examiner has attempted to answer the remarks in the body of the Office action.

Art Unit: 2155

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bharat Barot whose telephone number is (571) 272-3979. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne, can be reached at (571) 272-4001.

Any inquiry of general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-3900.



**BHARAT BAROT
PRIMARY EXAMINER**

Patent Examiner Bharat Barot

Art Unit 2155

June 29, 2005